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REMARKS

Claims 1-10 are now pending in this application. Claim 1 has been amended to more clearly set forth the novel method according to one embodiment of the invention, and new claims 6-10 have been added to provide applicants with protection commensurate in scope with the disclosure as warranted by the prior art. The indication that claim 5 is directed to allowable subject matter is appreciated. Reconsideration of this application is requested.

The rejection of claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Ichihara, U.S. Patent No. 5,227,968, is respectfully traversed. The present invention as claimed is directed to a method for discriminating unscattered events from scattered events in an obtained radiation distribution of radiation emanating from an object to be imaged, wherein the obtained distribution represents substantially the entire energy spectrum of radiation from the object. In particular, the present invention explains the shortcomings of using an energy window to filter detected events for acceptance in forming an image, in that use of a narrow energy window excludes a significant number of valid, unscattered events, thereby resulting in a low quality image, while use of a wide window to capture such valid off-peak events unavoidably also captures a significant amount of invalid scattered events, thereby degrading image quality by injecting "noise" into the image.

According to the present invention, substantially all of the unscattered events in a radiation distribution are retained for image formation, while substantially all of the scattered events in the distribution are rejected, without using any energy window discrimination. As explained in detail in the specification, this is accomplished by performing a mathematical operation on an obtained radiation distribution from an object to be imaged, with a response function obtained from a uniform flood field applied to the detector in a calibration procedure.

Contrary to the invention as claimed, Ichihara discloses that an energy spectrum of radiation events is obtained simultaneously with position signals calculated from such events, which have all passed through a restricted energy window. See col. 4, ll 35-45; window circuit 5, Figs. 1 and 2; and claim 1, ll. 5-6. Further, while Ichihara does disclose in col. 5, ll. 64-68 the use of a response function $E_{\text{inair}}(x,y,e)$ of the detector,

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such response function is used not in any mathematical operation on an obtained radiation distribution of substantially the entire energy spectrum of radiation emanating from an object, but rather is subtracted from the clinical energy spectrum $E(x,y,e)$ that is obtained by an energy window circuit simultaneously with calculation of position signals (x,y) , in order to obtain a scatter function $S(x,y)$ See col. 6, ll. 1-17.

Ichihara does not teach or suggest acquisition of substantially the entire energy spectrum of emitted radiation from an object to be imaged, as set forth in claims 1 and 10. The Office action adds Lingren et al., U.S. Patent No. 5,847,396 to Ichihara to reject claims 3 and 4 under 35 U.S.C. § 103, relying on Lingren for the proposition that it is known to use CZT detectors in radiation imaging. However, Lingren fails to cure the fundamental deficiency of Ichihara with respect to the independent claims, such that no combination of Lingren with Ichihara could result in the claimed invention.

Conclusion

In view of the foregoing, claims 1-10 are respectfully submitted to define patentable subject matter over the prior art of record, whether considered individually or in combination. Accordingly, favorable reconsideration of this application and the issuance of a Notice of Allowance are earnestly solicited. In the event any issues remain that may be resolved by a personal interview, the Examiner is invited to contact the undersigned to schedule such interview at a mutually convenient time.

Please charge any fee or credit any overpayment pursuant to 37 CFR 1.16 or 1.17 to Deposit Account No. 02-2135.

RESPECTFULLY SUBMITTED.					
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